



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/776,472 | 02/02/2001 | Masaaki Hiroki | SEL 238 | 7144 |

7590 09/25/2002

COOK, ALEX, MCFARRON, MANZO
CUMMINGS & MEHLER, LTD.
200 West Adams St., Suite 2850
Chicago, IL 60606

EXAMINER

CLEVELAND, MICHAEL B

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 09/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | | | |
|-----------------|-------------------|--------------|---------------|
| Application No. | 09/776,472 | Applicant(s) | HIROKI ET AL. |
| Examiner | Michael Cleveland | Art Unit | 1762 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 06 August 2002.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 6, 7 and 10-18 is/are pending in the application.

4a) Of the above claim(s) 13-18 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 6-7, 10-12 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) Interview Summary (PTO-413) Paper No(s) _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION***Election/Restrictions***

1. Applicant's election of Group II (misidentified as Group I; however, the Group I and III claims were canceled) in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Newly submitted claims 13-18 (Group IV) are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Inventions II and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as applying the liquid with heat and without ultrasonic oscillations or electric voltage. See MPEP § 806.05(d).

Since applicant has made an election (of Group II), this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 13-18 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6 and 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear whether the phrase "in accordance with..." requires the use of the following limitations or not. The claims have been interpreted as inclusive of applying liquid from the nozzle using ultrasonic oscillations and/or heat, the actual scope of the claims is unclear. The phrase "in accordance with..." renders claims 10-12 similarly unclear. The scope of claim 12 is also unclear because the term "a bank" is not sufficiently related to the remainder of the claim. Based on the specification, the claim has been treated as included the situation wherein a contact

member that influence the behavior of a nozzle contacts partition walls (banks) deposited on the substrate.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 6 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita et al. (WO98/24271, hereafter '271. References made are to the English equivalent, US Patent Application 2002/0041926) in view of Schultz et al. (U.S. Patent 5,985,356, hereafter '356). (Fujimura et al. (U.S. Patent 4,737,803, hereafter '803) is cited as evidence regarding claims 10-11).

'271 teaches filling an ink-jet nozzle with ink (an application liquid) for forming an electroluminescent (EL) layer and applying it to a pixel column (Abstract; Fig. 1).

'271 does not teach that the ink-jet nozzle works using ultrasonic oscillation or heat, but instead teaches the use of a pulse pressure dispenser (See [0083]-[0087]). '356 teaches the equivalence of bubble jet type printers with pulse pressure printers (col. 20, lines 30-43) for ink-jet printing fluids, including those containing EL materials (col. 37, lines 42-55). Bubble jet printers use heat to print (col. 20, lines 37-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a bubble ink-jet printer

rather than a pulse pressure ink-jet printer with the expectation of similar results and with a reasonable expectation of success.

Claims 10-11: '356 teaches that bubble jet printers work by creating bubbles in the dispenser that forces out the liquid. While this teaching does not explicitly demonstrate that such action creates pressure, '803 explicitly demonstrates the phenomenon (col. 1, lines 56-61).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita '271 in view of Schultz '356 as applied to claim 6 above, and further in view of Fujimura '803.

'271 and '356 are described above. '356 demonstrates that the orifice may have a smaller inside diameter than the rest of the nozzle (Fig. 6), but does not explicitly teach the provision of a heater on the orifice.

'803 teaches that the thermal energy for ejected ink jet droplets may be provided by heaters at the orifice (col. 2, lines 40-45; col. 5, lines 35-68). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided heaters at the orifice (which has a smaller diameter than the rest of the nozzle) with a reasonable expectation of success because '356 demonstrates an operative ink-jet nozzle formation with such a smaller nozzle and because '803 demonstrates that nozzles provided at the ink-jet nozzle orifice are operable for ejecting the ink.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita '271 in view of Schultz '356 as applied to claim 6 above, and further in view of Iguchi (WO98/27579, hereafter '579. References made are to the English equivalent US Patent Application 2002/0009536.).

'271 and '356 are described above. '271 teaches that the ink-jet printer prints between partition walls (banks). (Fig. 1; [0044]-[0050]), but the references do not explicitly teach applying the liquid while a contact element of the nozzle contacts partition members on the substrate.

'579 teaches that when depositing electroluminescent material between partition walls of EL displays ([0001]-[0003]), it is desirable to maintain a constant distance between the substrate and the nozzles, and that such distance may be maintained by an element in contact with the

Art Unit: 1762

partitions ([0246]-[0249]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a contact element in contact with the partition walls in order to have maintained a constant distance between the nozzle and the substrate during the coating process.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (703) 308-2331. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-3186 for regular communications and (703) 306-3186 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

MBC

MBC
September 23, 2002


SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700